



Prüfbericht-Nr.: <i>Test Report No.:</i>	50401183 001	Auftrags-Nr.: <i>Order No.:</i>	170249928	Seite 1 von 35 <i>Page 1 of 35</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2020-08-21	
Auftraggeber: <i>Client:</i>	AOK Industrial Company Limited Building 1, Shengzouzhi Technology Industrial Park, Shajing Street, Shenzhen City, Guangdong Province, China			
Prüfgegenstand: <i>Test item:</i>	LED Street Light			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	AOK-75WiL02-NV-L3-00-XX70-T201-PH AOK-75WiL02-NV-L5-00-XX70-T202-PH For variables XX denotes the CCT, it can be 30-57 for 3000-5700K			
Auftrags-Inhalt: <i>Order content:</i>	Type examination			
Prüfgrundlage: <i>Test specification:</i>	IES LM-79-08 plus the client's special requirements			
Wareneingangsdatum: <i>Date of receipt:</i>	2020-08-21	Detaillierte Fotodokumentation siehe Anlage zu diesem Bericht Detailed photo documentation see appendix to this report		
Prüfmuster-Nr.: <i>Test sample No.:</i>	170249928-006;007;022;023;024;025			
Prüfzeitraum: <i>Testing period:</i>	2020-08-21 to 2020-10-27			
Ort der Prüfung: <i>Place of testing:</i>	Standard-Tech Testing Services			
Prüflaboratorium: <i>Testing laboratory:</i>	TUV Rheinland (Guangdong) Ltd.			
Prüfergebnis*: <i>Test result*:</i>	See following pages			
geprüft von / tested by:		kontrolliert von / reviewed by:		
2020-12-31 Ken Ou / Project Engineer 		2020-12-31 Mars Yan / Reviewer 		
Datum <i>Date</i>	Name / Stellung <i>Name / Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name / Stellung <i>Name / Position</i>
Sonstiges / Others: N/A				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
<p>* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet</p> <p>Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested</p>				
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. M. Test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i></p>				

Copy of marking plate: N/A	
Test item	
Description.....	: LED Street Light
Trademark	: AOK
Model and/or type reference	: AOK-75WiL02-NV-L3-00-XX70-T201-PH AOK-75WiL02-NV-L5-00-XX70-T202-PH For variables XX denotes the CCT, it can be 30-57 for 3000-5700K For codes NV denotes 220-240V; L3 denotes 3030 chips; L5 denotes 5050 chips; 00 denotes without sensor; 70 denotes Ra 70; T201 and T202 denotes beam angle; PH denotes Photocell
Manufacturer.....	: AOK Industrial Company Limited Building 1, Shengzouzhi Technology Industrial Park, Shajing Street, Shenzhen City, Guangdong Province, China same as client
Factory.....	: AOK Industrial Company Limited Building 1, Shengzouzhi Technology Industrial Park, Shajing Street, Shenzhen City, Guangdong Province, China
Rating(s).....	: 220-240V~, 50-60Hz, 75W

Test case verdicts	
Test case does not apply to the test object.....	N/A
Test item does meet the requirement	P(ass)
Test item does not meet the requirement	F(ail)
Testing	
Date of receipt of test item	See cover page
Date(s) of performance of test.....	See cover page
General remarks:	
This report shall not be reproduced except in full without the written approval of the testing laboratory.	
The test results presented in this report relate only to the item(s) tested.	
“(see remark #)” refers to a remark appended to the report.	
“(see Annex #)” refers to an annex appended to the report.	
Throughout this report a point is used as the decimal separator.	
List of test equipment must be kept on file and available for review.	
Only Spectrums of models with 3000K LED were attached in table 2 according to client`s requirement.	

Summary of testing:

1. As per client's special requirement, integrating sphere test and goniophotometer test was conducted under 230VAC, 50Hz.
2. Test place:
Standard-Tech Testing Services
Address: Standard-Tech Building, No. 6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China.
3. LED luminaire model and LED specification see below tables.

Luminaire model list:

Model	LED Driver	Rated Input	Rated Power	CCT	Ra	LED
AOK-75WiL02-NV-L3-00-XX70-T201-PH	(Philips) Xi FP 75W 0.3-1.0A SNLDAE 230VC133 sXt	220-240V~, 50-60Hz	75W	3000- 5700K	>70	LUXEON 3030 2D
AOK-75WiL02-NV-L5-00-XX70-T202-PH	(Philips) Xi FP 75W 0.3-1.0A SNLDAE 230VC133 sXt	220-240V~, 50-60Hz	75W	3000- 5700K	>70	LUXEON 5050

LED specification:

Type	Manufacturer	Size (mm)	I _F (mA)	V _F (V)	CCT (K)	Viewing angle (°)
LUXEON 3030 2D	Lumileds	3.00x3.00x0.66	120	5.6-6.6	3000-5700K	116
LUXEON 5050	Lumileds	5.00x5.18x0.70	240	23.5-26.5	3000-5700K	116

4. Test result only for models:

AOK-75WiL02-NV-L3-00-3070-T201-PH; AOK-75WiL02-NV-L3-00-4070-T201-PH;
AOK-75WiL02-NV-L3-00-5770-T201-PH; AOK-75WiL02-NV-L5-00-3070-T202-PH;
AOK-75WiL02-NV-L5-00-4070-T202-PH; AOK-75WiL02-NV-L5-00-5770-T202-PH

5. Test summary: (All models are only different in the LED)

Model	AOK-75WiL02-NV-L3-00-3070-T201-PH	AOK-75WiL02-NV-L3-00-4070-T201-PH	AOK-75WiL02-NV-L3-00-5770-T201-PH	AOK-75WiL02-NV-L5-00-3070-T202-PH	AOK-75WiL02-NV-L5-00-4070-T202-PH	AOK-75WiL02-NV-L5-00-5770-T202-PH
LED type	LUXEON 3030 2D	LUXEON 3030 2D	LUXEON 3030 2D	LUXEON 5050	LUXEON 5050	LUXEON 5050
LED model No.	L130-3070003000 X21 P7DH	L130-4070003000 X21 Q5DG	L130-5770003000 X21 Q2DG	L150-3070502400 000 L3A1	L150-4070502400 000 M3A1	L150-5770502400 000 M3A1
LED driver	(Philips) Xi FP 75W 0.3-1.0A SNLDAE 230VC133 sXt					
Input Power (W)	74.31	74.46	74.38	74.71	74.55	74.59
Luminous Flux (lm)	10636	11268	11140	10722	10924	10968
Luminous Efficacy (lm/W)	143.13	151.33	149.77	143.53	146.54	147.03
CCT (K)	2988	3942	5609	3041	3955	5666
Ra	73.2	72.3	72.5	72.8	71.9	73.4
R9	-31	-28	-25	-26	-25	-22
THDI	6.1%	6.28%	6.2%	6.3%	6.29%	6.25%
SDCM	1.8	2.1	7.4	3.8	1.8	6.3

2.0	Ambient Conditions		P
2.1	General		P
2.2	Air Temperature	25°C±1°C	P
2.3	Thermal Condition for Mounting SSL Products		P
2.4	Air Movement		P
3.0	Power Supply Characteristics		P
3.1	Waveshape of AC power supply	<3%	P
3.2	Voltage regulation	Within ±0.2% under load	P
4.0	Seasoning of SSL Product		N/A
	No seasoning of SSL product	Tested with no seasoning	N/A
5.0	Stabilization of SSL Product		P
	SSL product has sufficiently stabilized before measurement	150 minutes	P
6.0	Operation Orientation		P
	SSL product shall be stabilized and measured in intended operating orientation	As normal use	P
7.0	Electrical Settings		P
	SSL product shall be operated at rated voltage	230VAC, 50Hz	P
	SSL product with dimming capability are tested at maximum input power condition		N/A
	SSL product with different modes are measured in all relevant modes		N/A
8.0	Electrical Instrumentations		P
8.1	Circuits		P
8.2	Uncertainties		P
9.0	Test methods for Total Luminous Flux measurement		P
9.1	Integrating sphere with a spectroradiometer (Sphere-spectroradiometer system)		P
9.2	Integrating sphere with a photometer head (Sphere-photometer system)		N/A
9.3	Goniophotometer		P
10.0	Luminous Intensity Distribution		P
11.0	Luminous Efficacy		P
	Calculation	See table 1	P
12.0	Test Methods for Color Characteristics of SSL Products		N/A
	Measurements	See table 1	N/A

Table 1	Test Data	
Model	AOK-75WiL02-NV-L3-00-3070-T201-PH	
Test item	Measured Value	
	Integrating Sphere	Goniophotometer
Photometric Results		
Total Luminous Flux (lm)	--	10636
Luminous Efficacy (lm/W)	--	143.13
Correlated Color Temperature (CCT, K)	2988	--
Color Rendering Index (Ra)	73.2	--
R9	-31	--
Chromaticity (Chroma x / Chroma y)	0.4369/0.4024	--
Chromaticity (Chroma u' / Chroma v')	0.2512/0.5207	--
SDCM	1.8	--
Imax (cd)	--	5287
Average Beam Angle (50%)	--	--
Zonal Flux (0-60°)	--	79.0%
Zonal Flux (60-90°)	--	21.0%
Zonal Flux (90-180°)	--	0%
Spacing Criteria (C/γ)	--	22.5° / 1°
Goniophotometer Type	--	Type C
Electrical Results		
Input Voltage (V)	--	230
Input Frequency (Hz)	--	50
Input Current (A)	--	0.3266
Input Power (W)	--	74.31
Power Factor	--	0.988
THDI	--	6.1%
Additional Information		
Stabilization Time (Light output and electrical power, Minutes)	More than 150min	More than 150min
Sphere Geometry Configuration	4π	--
Ambient Temperature (°C) / R.H. (%):	24.6 / 64.7	25.2 / 55.6
Note: - The sample is placed inside the integrating sphere or goniophotometer and power by a regulated supply. Stability is achieved when the variation of 3 readings of light output and electrical power over a period of 30 minutes, taken 15 minutes apart, is less than 0.5%.		

Table 1	Test Data	
Model	AOK-75WiL02-NV-L3-00-4070-T201-PH	
Test item	Measured Value	
	Integrating Sphere	Goniophotometer
Photometric Results		
Total Luminous Flux (lm)	--	11268
Luminous Efficacy (lm/W)	--	151.33
Correlated Color Temperature (CCT, K)	3942	--
Color Rendering Index (Ra)	72.3	--
R9	-28	--
Chromaticity (Chroma x / Chroma y)	0.3838/0.3809	--
Chromaticity (Chroma u' / Chroma v')	0.2256/0.5039	--
SDCM	2.1	--
Imax (cd)	--	5302
Average Beam Angle (50%)	--	--
Zonal Flux (0-60°)	--	79.9%
Zonal Flux (60-90°)	--	20.1%
Zonal Flux (90-180°)	--	0%
Spacing Criteria (C/γ)	--	22.5° / 1°
Goniophotometer Type	--	Type C
Electrical Results		
Input Voltage (V)	--	230
Input Frequency (Hz)	--	50
Input Current (A)	--	0.3273
Input Power (W)	--	74.46
Power Factor	--	0.988
THDI	--	6.28%
Additional Information		
Stabilization Time (Light output and electrical power, Minutes)	More than 150min	More than 150min
Sphere Geometry Configuration	4π	--
Ambient Temperature (°C) / R.H. (%):	24.6 / 64.7	25.2/ 55.6
Note:		
- The sample is placed inside the integrating sphere or goniophotometer and power by a regulated supply. Stability is achieved when the variation of 3 readings of light output and electrical power over a period of 30 minutes, taken 15 minutes apart, is less than 0.5%.		

Table 1	Test Data	
Model	AOK-75WiL02-NV-L3-00-5770-T201-PH	
Test item	Measured Value	
	Integrating Sphere	Goniophotometer
Photometric Results		
Total Luminous Flux (lm)	--	11140
Luminous Efficacy (lm/W)	--	149.77
Correlated Color Temperature (CCT, K)	5609	--
Color Rendering Index (Ra)	72.5	--
R9	-25	--
Chromaticity (Chroma x / Chroma y)	0.3299/0.3437	--
Chromaticity (Chroma u' / Chroma v')	0.2042/0.4785	--
SDCM	7.4	--
Imax (cd)	--	4928
Average Beam Angle (50%)	--	--
Zonal Flux (0-60°)	--	79.9%
Zonal Flux (60-90°)	--	20.1%
Zonal Flux (90-180°)	--	0%
Spacing Criteria (C/γ)	--	22.5° / 1°
Goniophotometer Type	--	Type C
Electrical Results		
Input Voltage (V)	--	230
Input Frequency (Hz)	--	50
Input Current (A)	--	0.3270
Input Power (W)	--	74.38
Power Factor	--	0.988
THDI	--	6.2%
Additional Information		
Stabilization Time (Light output and electrical power, Minutes)	More than 150min	More than 150min
Sphere Geometry Configuration	4π	--
Ambient Temperature (°C) / R.H. (%):	24.6 / 64.7	25.2/ 55.6
Note:		
- The sample is placed inside the integrating sphere or goniophotometer and power by a regulated supply. Stability is achieved when the variation of 3 readings of light output and electrical power over a period of 30 minutes, taken 15 minutes apart, is less than 0.5%.		

Table 1	Test Data	
Model	AOK-75WiL02-NV-L5-00-3070-T202-PH	
Test item	Measured Value	
	Integrating Sphere	Goniophotometer
Photometric Results		
Total Luminous Flux (lm)	--	10722
Luminous Efficacy (lm/W)	--	143.53
Correlated Color Temperature (CCT, K)	3041	--
Color Rendering Index (Ra)	72.8	--
R9	-26	--
Chromaticity (Chroma x / Chroma y)	0.4345/0.4039	--
Chromaticity (Chroma u' / Chroma v')	0.2491/0.5209	--
SDCM	3.8	--
Imax (cd)	--	5546
Average Beam Angle (50%)	--	--
Zonal Flux (0-60°)	--	73.7%
Zonal Flux (60-90°)	--	26.3%
Zonal Flux (90-180°)	--	0%
Spacing Criteria (C/γ)	--	22.5° / 1°
Goniophotometer Type	--	Type C
Electrical Results		
Input Voltage (V)	--	230
Input Frequency (Hz)	--	50
Input Current (A)	--	0.3284
Input Power (W)	--	74.71
Power Factor	--	0.988
THDI	--	6.3%
Additional Information		
Stabilization Time (Light output and electrical power, Minutes)	More than 150min	More than 150min
Sphere Geometry Configuration	4π	--
Ambient Temperature (°C) / R.H. (%):	24.6 / 64.7	25.2/ 55.6
Note:		
- The sample is placed inside the integrating sphere or goniophotometer and power by a regulated supply. Stability is achieved when the variation of 3 readings of light output and electrical power over a period of 30 minutes, taken 15 minutes apart, is less than 0.5%.		

Table 1	Test Data	
Model	AOK-75WiL02-NV-L5-00-4070-T202-PH	
Test item	Measured Value	
	Integrating Sphere	Goniophotometer
Photometric Results		
Total Luminous Flux (lm)	--	10924
Luminous Efficacy (lm/W)	--	146.54
Correlated Color Temperature (CCT, K)	3955	--
Color Rendering Index (Ra)	71.9	--
R9	-25	--
Chromaticity (Chroma x / Chroma y)	0.3838/0.3828	--
Chromaticity (Chroma u' / Chroma v')	0.2249/0.5047	--
SDCM	1.8	--
Imax (cd)	--	5498
Average Beam Angle (50%)	--	--
Zonal Flux (0-60°)	--	73.5%
Zonal Flux (60-90°)	--	26.5%
Zonal Flux (90-180°)	--	0%
Spacing Criteria (C/y)	--	22.5° / 1°
Goniophotometer Type	--	Type C
Electrical Results		
Input Voltage (V)	--	230
Input Frequency (Hz)	--	50
Input Current (A)	--	0.3276
Input Power (W)	--	74.55
Power Factor	--	0.988
THDI	--	6.29%
Additional Information		
Stabilization Time (Light output and electrical power, Minutes)	More than 150min	More than 150min
Sphere Geometry Configuration	4π	--
Ambient Temperature (°C) / R.H. (%):	24.6 / 64.7	25.2 / 55.6
Note: - The sample is placed inside the integrating sphere or goniophotometer and power by a regulated supply. Stability is achieved when the variation of 3 readings of light output and electrical power over a period of 30 minutes, taken 15 minutes apart, is less than 0.5%.		

Table 1	Test Data	
Model	AOK-75WiL02-NV-L5-00-5770-T202-PH	
Test item	Measured Value	
	Integrating Sphere	Goniophotometer
Photometric Results		
Total Luminous Flux (lm)	--	10968
Luminous Efficacy (lm/W)	--	147.03
Correlated Color Temperature (CCT, K)	5666	--
Color Rendering Index (Ra)	73.4	--
R9	-22	--
Chromaticity (Chroma x / Chroma y)	0.3287/0.3438	--
Chromaticity (Chroma u' / Chroma v')	0.2033/0.4784	--
SDCM	6.3	--
Imax (cd)	--	5502
Average Beam Angle (50%)	--	--
Zonal Flux (0-60°)	--	73.3%
Zonal Flux (60-90°)	--	26.7%
Zonal Flux (90-180°)	--	0%
Spacing Criteria (C/γ)	--	22.5° / 1°
Goniophotometer Type	--	Type C
Electrical Results		
Input Voltage (V)	--	230
Input Frequency (Hz)	--	50
Input Current (A)	--	0.3280
Input Power (W)	--	74.59
Power Factor	--	0.988
THDI	--	6.25%
Additional Information		
Stabilization Time (Light output and electrical power, Minutes)	More than 150min	More than 150min
Sphere Geometry Configuration	4π	--
Ambient Temperature (°C) / R.H. (%):	24.6 / 64.7	25.2/ 55.6
Note:		
- The sample is placed inside the integrating sphere or goniophotometer and power by a regulated supply. Stability is achieved when the variation of 3 readings of light output and electrical power over a period of 30 minutes, taken 15 minutes apart, is less than 0.5%.		

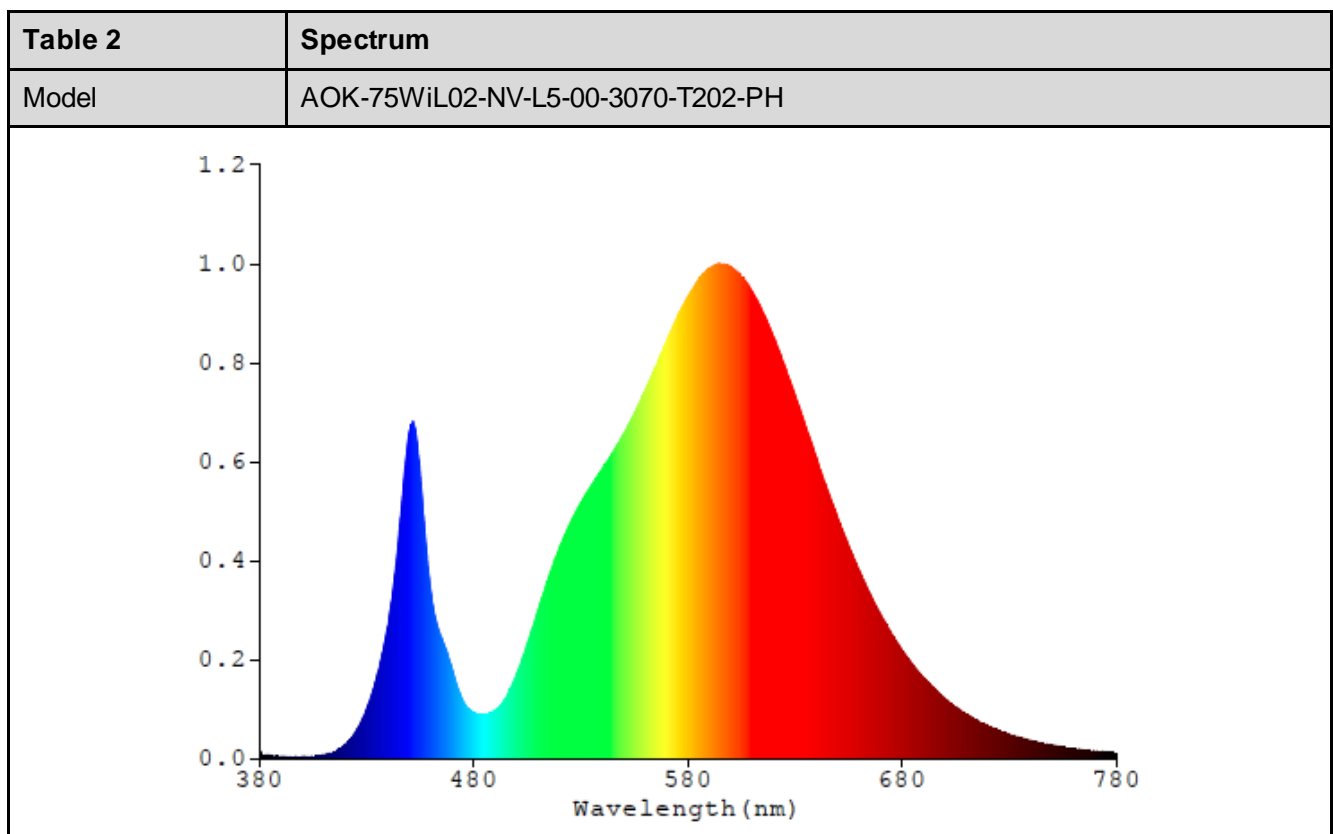
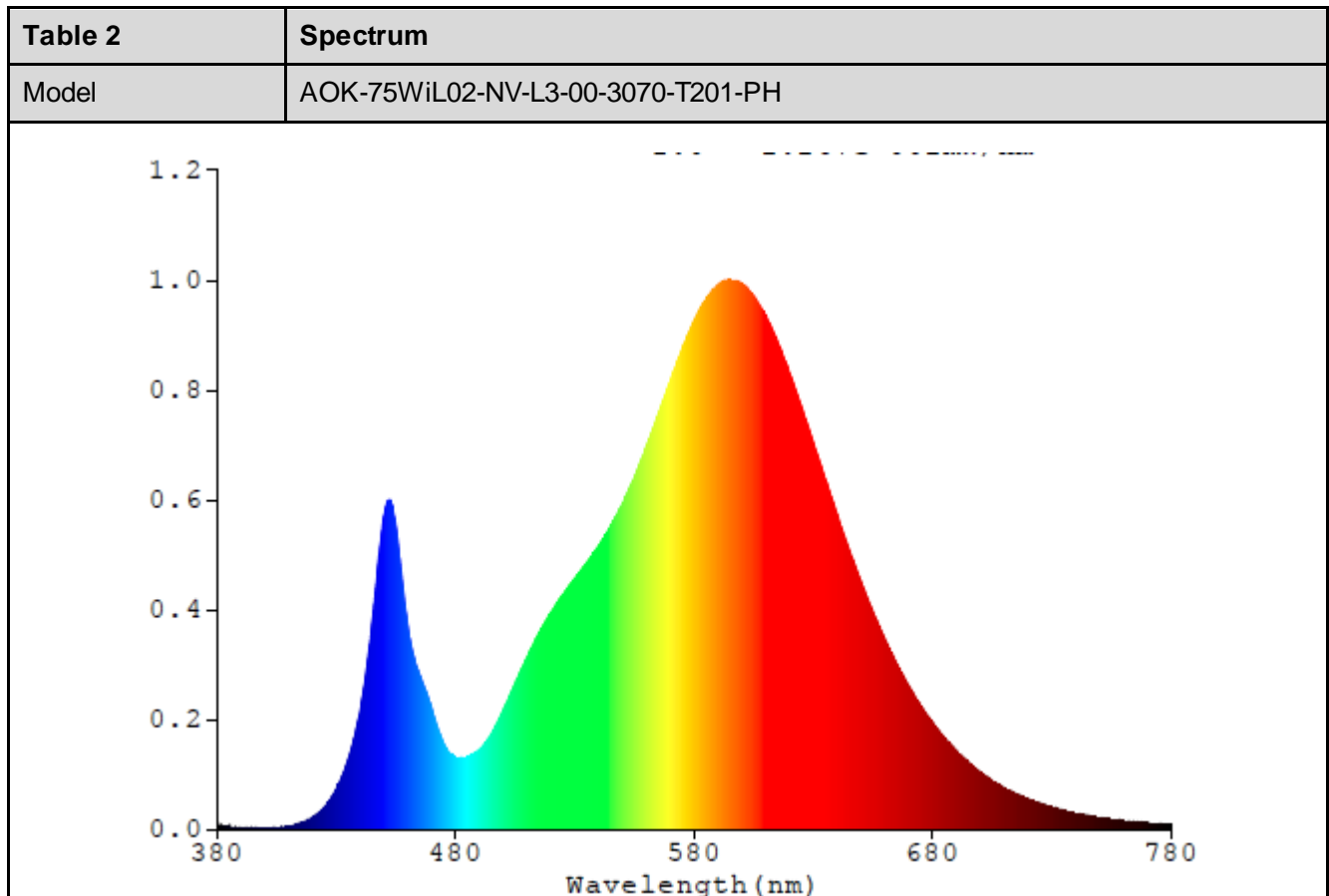
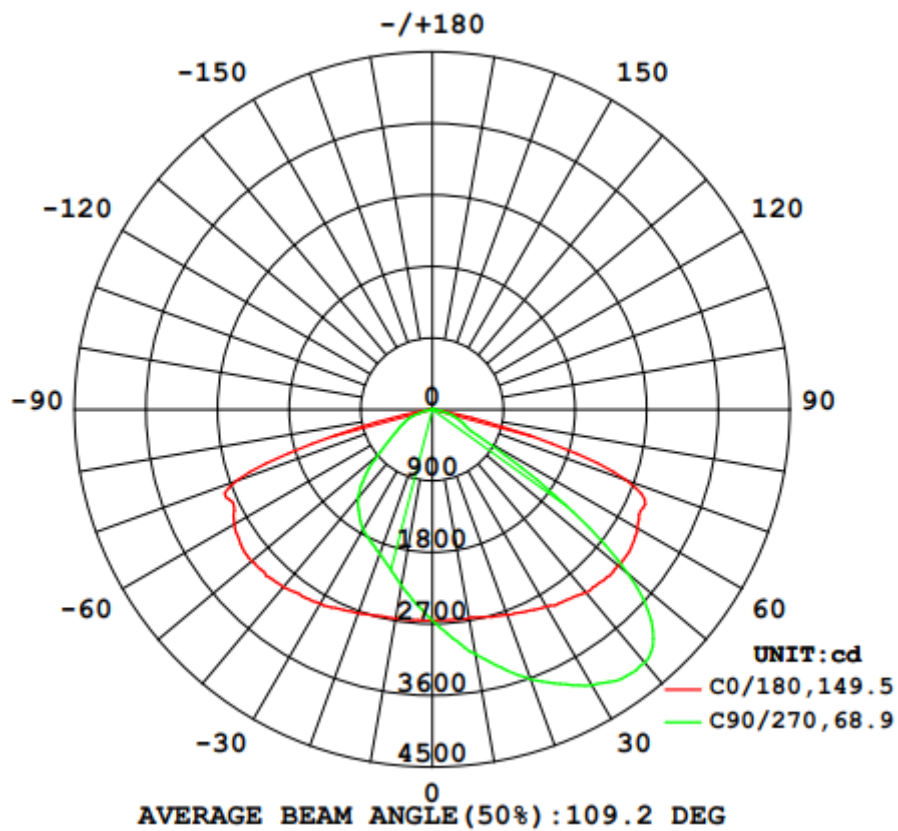


Table 3	Luminous Distribution Diagram
model	AOK-75WiL02-NV-L3-00-3070-T201-PH

AOK-75WiL02-NV-L3-00-3070-T201-PH_LUXEON 3030 2D_3000K



Zonal Flux Diagram

ZONAL LUMEN SUMMARY			LUMENS PER ZONE					
ZONE	LUMENS	%LUMINAIRE	ZONE	LUMENS	%TOTAL	ZONE	LUMENS	%TOTAL
0-30	2,330.4	21.9%	0-10	254.9	2.4%	90-100	0	0%
0-40	4,150.2	39%	10-20	772.3	7.3%	100-110	0	0%
0-60	8,405.0	79%	20-30	1,303.3	12.3%	110-120	0	0%
60-90	2,229.7	21%	30-40	1,819.8	17.1%	120-130	0	0%
70-100	725.4	6.8%	40-50	2,195.5	20.6%	130-140	0	0%
90-120	0	0%	50-60	2,059.3	19.4%	140-150	0	0%
0-90	10,634.7	100%	60-70	1,504.3	14.1%	150-160	0	0%
90-180	0	0%	70-80	675.0	6.3%	160-170	0	0%
0-180	10,634.7	100%	80-90	50.3	0.5%	170-180	0	0%

IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1314.1	12.4
FM - Front-Medium(30-60)	3361	31.6
FH - Front-High(60-80)	1132.3	10.6
FVH - Front-Very High(80-90)	26.591	0.3
Total Forward Light	5834	54.9

BL - Back-Low(0-30)	1016.3	9.6
BM - Back-Medium(30-60)	2714.7	25.5
BH - Back-High(60-80)	1046.9	9.8
BVH - Back-Very High(80-90)	23.722	0.2
Total Back Light	4801.6	45.1

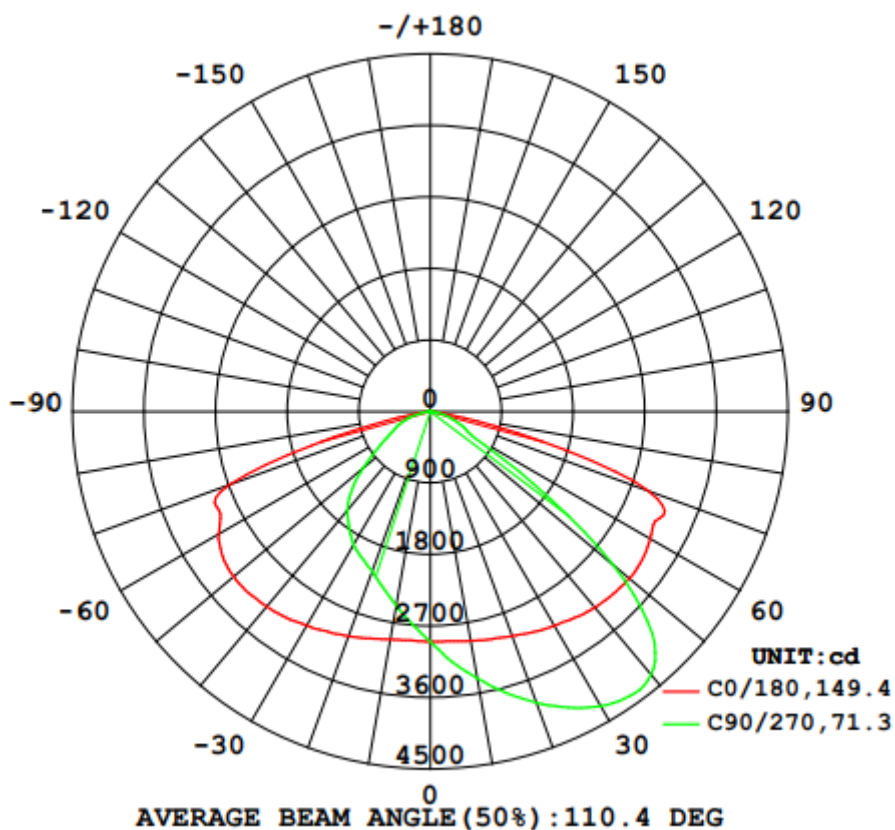
UL - Uplight-Low(90-100)	0	0.0
UH - Uplight-High(100-180)	0	0.0
Total Up Light	0	0.0

BUG(Back,Up,Glare) Rating	B3-U0-G3
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	4801.6	0	4801.6
Street Side	5834	0	5834

Table 3	Luminous Distribution Diagram
model	AOK-75WiL02-NV-L3-00-4070-T201-PH

AOK-75WiL02-NV-L3-00-4070-T201-PH_LUXEON 3030 2D_4000K



Zonal Flux Diagram

ZONAL LUMEN SUMMARY			LUMENS PER ZONE					
ZONE	LUMENS	%LUMINAIRE	ZONE	LUMENS	%TOTAL	ZONE	LUMENS	%TOTAL
0-30	2,550.3	22.6%	0-10	279.0	2.5%	90-100	0	0%
0-40	4,525.4	40.2%	10-20	846.4	7.5%	100-110	0	0%
0-60	9,001.6	79.9%	20-30	1,424.9	12.7%	110-120	0	0%
60-90	2,262.2	20.1%	30-40	1,975.1	17.5%	120-130	0	0%
70-100	713.9	6.3%	40-50	2,343.4	20.8%	130-140	0	0%
90-120	0	0%	50-60	2,132.8	18.9%	140-150	0	0%
0-90	11,263.7	100%	60-70	1,548.3	13.7%	150-160	0	0%
90-180	0	0%	70-80	661.8	5.9%	160-170	0	0%
0-180	11,263.7	100%	80-90	52.0	0.5%	170-180	0	0%

IESNA Luminaire Flux Distribution Table:

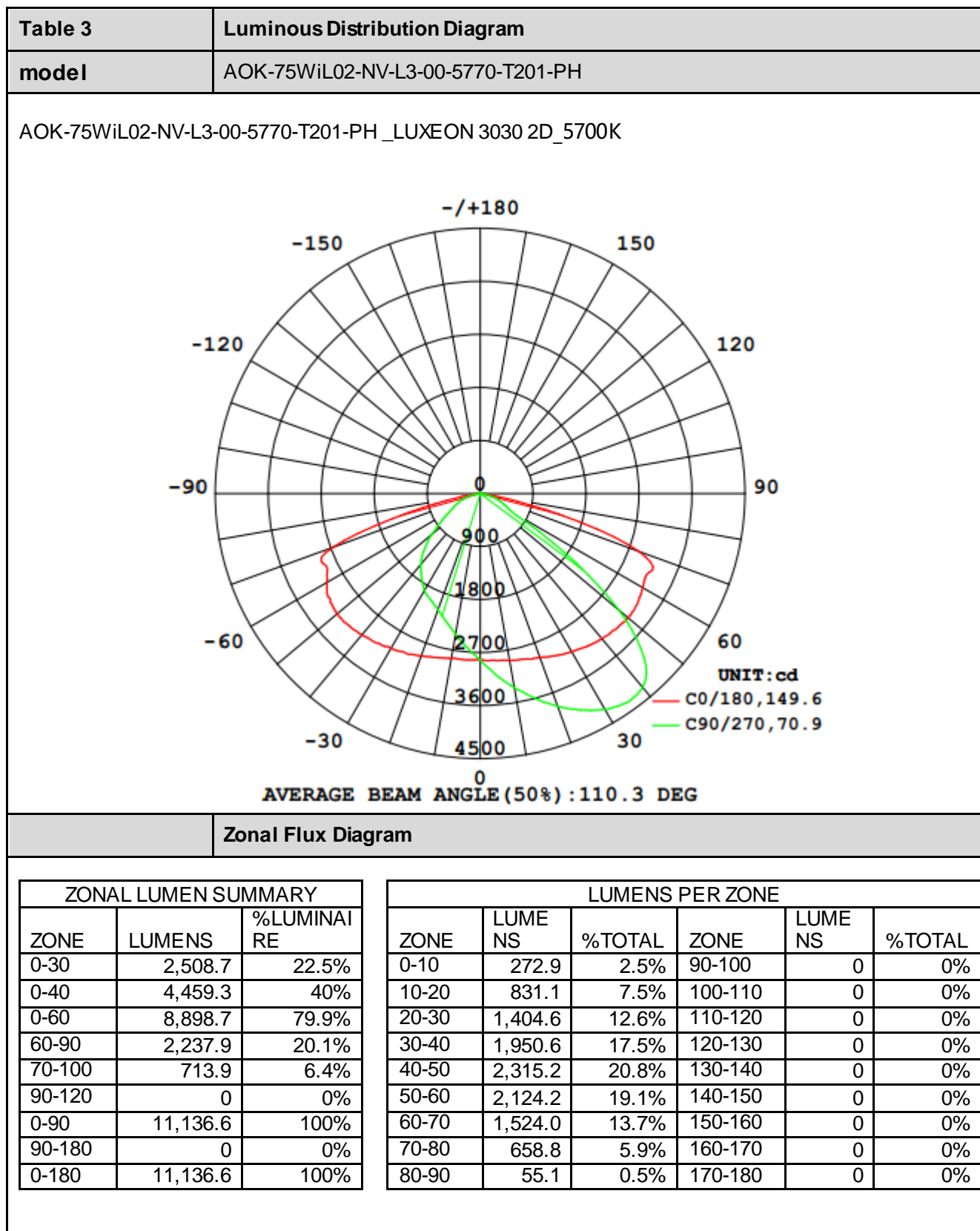
Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1433.2	12.7
FM - Front-Medium(30-60)	3530.1	31.3
FH - Front-High(60-80)	1137.9	10.1
FVH - Front-Very High(80-90)	27.405	0.2
Total Forward Light	6128.6	54.4

BL - Back-Low(0-30)	1117	9.9
BM - Back-Medium(30-60)	2923.2	25.9
BH - Back-High(60-80)	1074.2	9.5
BVH - Back-Very High(80-90)	24.654	0.2
Total Back Light	5139	45.6

UL - Uplight-Low(90-100)	0	0.0
UH - Uplight-High(100-180)	0	0.0
Total Up Light	0	0.0

BUG(Back,Up,Glare) Rating	B3-U0-G3
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	5139	0	5139
Street Side	6128.6	0	6128.6



IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1414.6	12.7
FM - Front-Medium(30-60)	3518.7	31.6
FH - Front-High(60-80)	1131.2	10.2
FVH - Front-Very High(80-90)	28.794	0.3
Total Forward Light	6093.3	54.7

BL - Back-Low(0-30)	1093.9	9.8
BM - Back-Medium(30-60)	2873.2	25.8
BH - Back-High(60-80)	1053.5	9.5
BVH - Back-Very High(80-90)	26.294	0.2
Total Back Light	5046.9	45.3

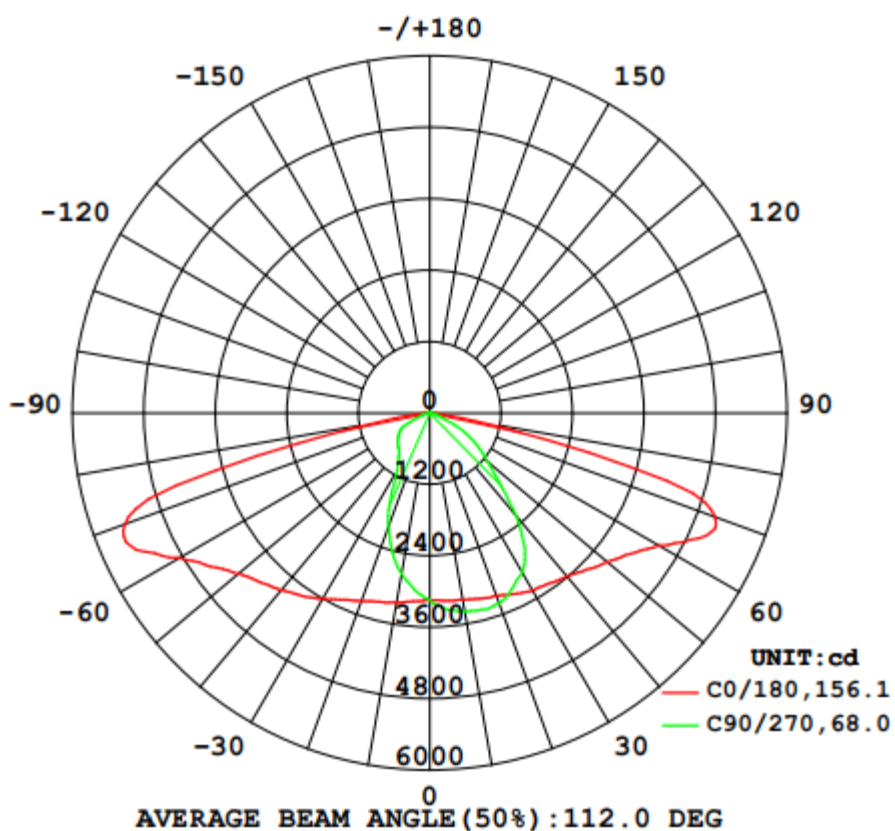
UL - Uplight-Low(90-100)	0	0.0
UH - Uplight-High(100-180)	0	0.0
Total Up Light	0	0.0

BUG(Back,Up,Glare) Rating	B3-U0-G3
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	5046.9	0	5046.9
Street Side	6093.3	0	6093.3

Table 3	Luminous Distribution Diagram
model	AOK-75WiL02-NV-L5-00-3070-T202-PH

AOK-75WiL02-NV-L5-00-3070-T202-PH _ LUXEON 5050_3000K



Zonal Flux Diagram

ZONAL LUMEN SUMMARY			LUMENS PER ZONE					
ZONE	LUMENS	%LUMINAIRE	ZONE	LUMENS	%TOTAL	ZONE	LUMENS	%TOTAL
0-30	2,526.3	23.6%	0-10	300.4	2.8%	90-100	0	0%
0-40	4,212.5	39.3%	10-20	874.2	8.2%	100-110	0	0%
0-60	7,898.4	73.7%	20-30	1,351.7	12.6%	110-120	0	0%
60-90	2,825.7	26.3%	30-40	1,686.2	15.7%	120-130	0	0%
70-100	1,080.9	10.1%	40-50	1,839.3	17.2%	130-140	0	0%
90-120	0	0%	50-60	1,846.6	17.2%	140-150	0	0%
0-90	10,724.1	100%	60-70	1,744.8	16.3%	150-160	0	0%
90-180	0	0%	70-80	1,017.8	9.5%	160-170	0	0%
0-180	10,724.1	100%	80-90	63.1	0.6%	170-180	0	0%

IESNA Luminaire Flux Distribution Table:

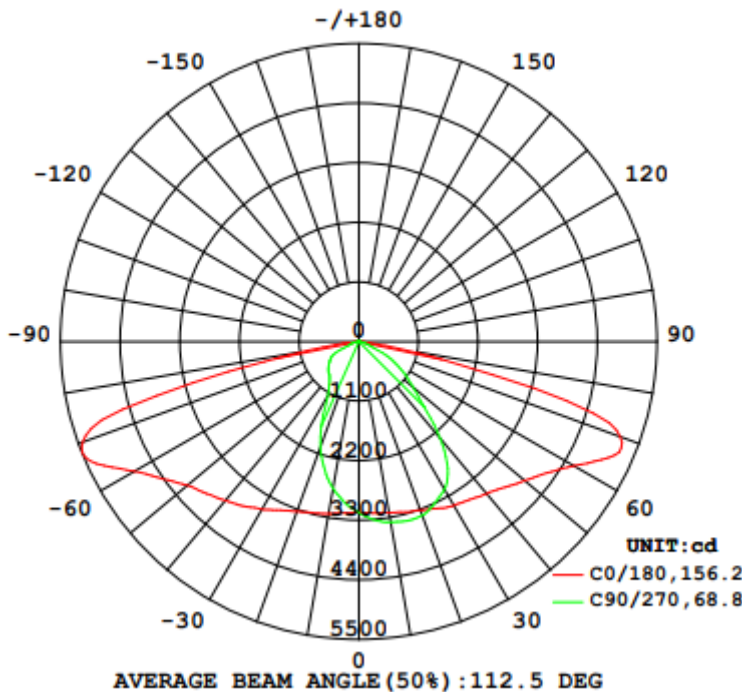
Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1388.5	12.9
FM - Front-Medium(30-60)	2797.3	26.1
FH - Front-High(60-80)	1370.2	12.8
FVH - Front-Very High(80-90)	32.328	0.3
Total Forward Light	5588.3	52.1

BL - Back-Low(0-30)	1137.7	10.6
BM - Back-Medium(30-60)	2574.5	24.0
BH - Back-High(60-80)	1391.2	13.0
BVH - Back-Very High(80-90)	30.771	0.3
Total Back Light	5134.1	47.9

UL - Uplight-Low(90-100)	0	0.0
UH - Uplight-High(100-180)	0	0.0
Total Up Light	0	0.0

BUG(Back,Up,Glare) Rating	B3-U0-G1
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	5134.1	0	5134.1
Street Side	5588.3	0	5588.3

Table 3	Luminous Distribution Diagram																																																																			
model	AOK-75WiL02-NV-L5-00-4070-T202-PH																																																																			
AOK-75WiL02-NV-L5-00-4070-T202-PH_LUXEON 5050_4000K																																																																				
<div><p style="text-align: center;">AVERAGE BEAM ANGLE (50%) : 112.5 DEG</p></div>																																																																				
	Zonal Flux Diagram																																																																			
<table><tr><th colspan="3">ZONAL LUMEN SUMMARY</th></tr><tr><th>ZONE</th><th>LUMENS</th><th>%LUMINAIRE</th></tr><tr><td>0-30</td><td>2,545.4</td><td>23.3%</td></tr><tr><td>0-40</td><td>4,259.2</td><td>39%</td></tr><tr><td>0-60</td><td>8,030.4</td><td>73.5%</td></tr><tr><td>60-90</td><td>2,893.9</td><td>26.5%</td></tr><tr><td>70-100</td><td>1,115.1</td><td>10.2%</td></tr><tr><td>90-120</td><td>0</td><td>0%</td></tr><tr><td>0-90</td><td>10,924.3</td><td>100%</td></tr><tr><td>90-180</td><td>0</td><td>0%</td></tr><tr><td>0-180</td><td>10,924.3</td><td>100%</td></tr></table>			ZONAL LUMEN SUMMARY			ZONE	LUMENS	%LUMINAIRE	0-30	2,545.4	23.3%	0-40	4,259.2	39%	0-60	8,030.4	73.5%	60-90	2,893.9	26.5%	70-100	1,115.1	10.2%	90-120	0	0%	0-90	10,924.3	100%	90-180	0	0%	0-180	10,924.3	100%																																	
ZONAL LUMEN SUMMARY																																																																				
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80-90	67.8	0.6%	170-180	0	0%																																																															

IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1406.7	12.9
FM - Front-Medium(30-60)	2891.6	26.5
FH - Front-High(60-80)	1405.4	12.9
FVH - Front-Very High(80-90)	32.419	0.3
Total Forward Light	5736.1	52.5

BL - Back-Low(0-30)	1138.7	10.4
BM - Back-Medium(30-60)	2593.8	23.7
BH - Back-High(60-80)	1420	13.0
BVH - Back-Very High(80-90)	35.388	0.3
Total Back Light	5187.9	47.5

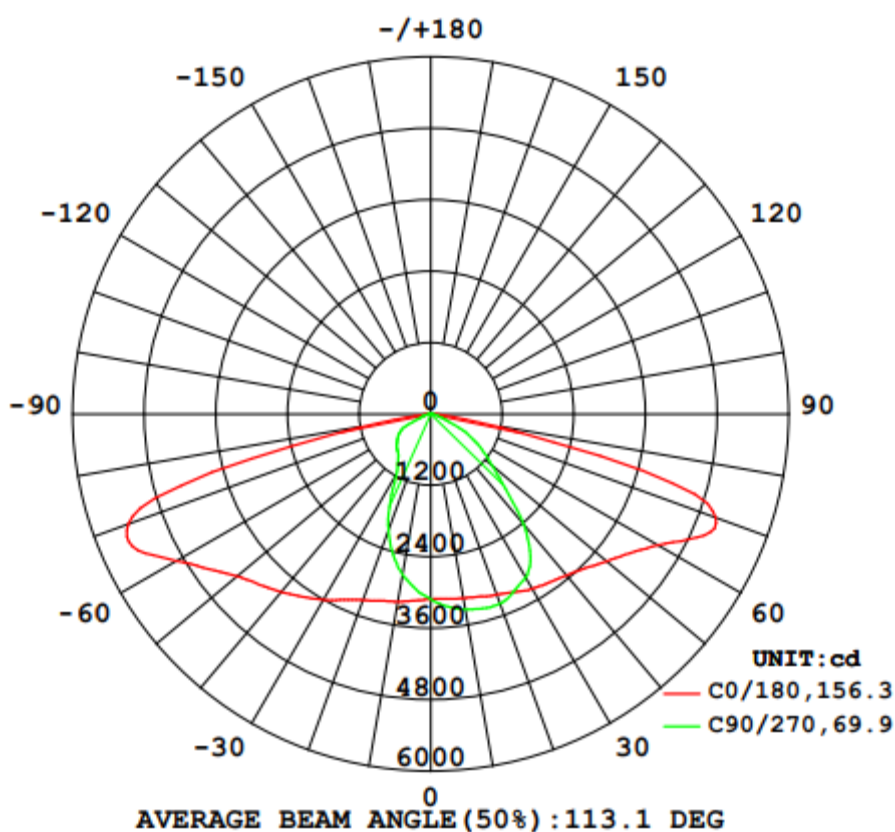
UL - Uplight-Low(90-100)	0	0.0
UH - Uplight-High(100-180)	0	0.0
Total Up Light	0	0.0

BUG(Back,Up,Glare) Rating	B3-U0-G1
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	5187.9	0	5187.9
Street Side	5736.1	0	5736.1

Table 3	Luminous Distribution Diagram
model	AOK-75WiL02-NV-L5-00-5770-T202-PH

AOK-75WiL02-NV-L5-00-5770-T202-PH_LUXEON 5050_5700K



Zonal Flux Diagram

ZONAL LUMEN SUMMARY			LUMENS PER ZONE					
ZONE	LUMENS	%LUMINAIRE	ZONE	LUMENS	%TOTAL	ZONE	LUMENS	%TOTAL
0-30	2,521.5	23%	0-10	297.3	2.7%	90-100	0	0%
0-40	4,234.7	38.6%	10-20	869.1	7.9%	100-110	0	0%
0-60	8,037.1	73.3%	20-30	1,355.1	12.4%	110-120	0	0%
60-90	2,931.9	26.7%	30-40	1,713.2	15.6%	120-130	0	0%
70-100	1,144.8	10.4%	40-50	1,891.5	17.2%	130-140	0	0%
90-120	0	0%	50-60	1,911.0	17.4%	140-150	0	0%
0-90	10,969.1	100%	60-70	1,787.1	16.3%	150-160	0	0%
90-180	0	0%	70-80	1,070.8	9.8%	160-170	0	0%
0-180	10,969.1	100%	80-90	74.0	0.7%	170-180	0	0%

IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1383.4	12.6
FM - Front-Medium(30-60)	2857.8	26.1
FH - Front-High(60-80)	1411.2	12.9
FVH - Front-Very High(80-90)	38.126	0.3
Total Forward Light	5690.5	51.9

BL - Back-Low(0-30)	1138	10.4
BM - Back-Medium(30-60)	2657.8	24.2
BH - Back-High(60-80)	1445.5	13.2
BVH - Back-Very High(80-90)	35.889	0.3
Total Back Light	5277.2	48.1

UL - Uplight-Low(90-100)	0	0.0
UH - Uplight-High(100-180)	0	0.0
Total Up Light	0	0.0

BUG(Back,Up,Glare) Rating	B3-U0-G1
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	5277.2	0	5277.2
Street Side	5690.5	0	5690.5

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Table 6		Equipment List	
Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-423	2 meter Integrating Sphere	Verified by D204 standard lamp	
ST-R-327	Spectral analysis system HAAS-2000	Verified by D204 standard lamp	
ST-R-332	Standard Lamp	2020-07-08	2021-07-07
ST-R-333	Power Meter for Integrating Sphere	2020-06-26	2021-06-25
ST-R-405	Temperature Probe for Integrating Sphere	2020-01-23	2021-01-22
ST-R-355	Goniophotometer system	Verified by D908S standard lamp	
ST-R-359	Standard Lamp	2020-07-08	2021-07-07
ST-R-358	Power Meter for Goniophotometer	2020-06-26	2021-06-25
ST-R-354	hygrothermograph for Goniophotometer	2020-06-27	2021-06-28

Appendix: Product Photos

Over view of AOK-75WiL02-NV-L3-00-XX70-T201-PH



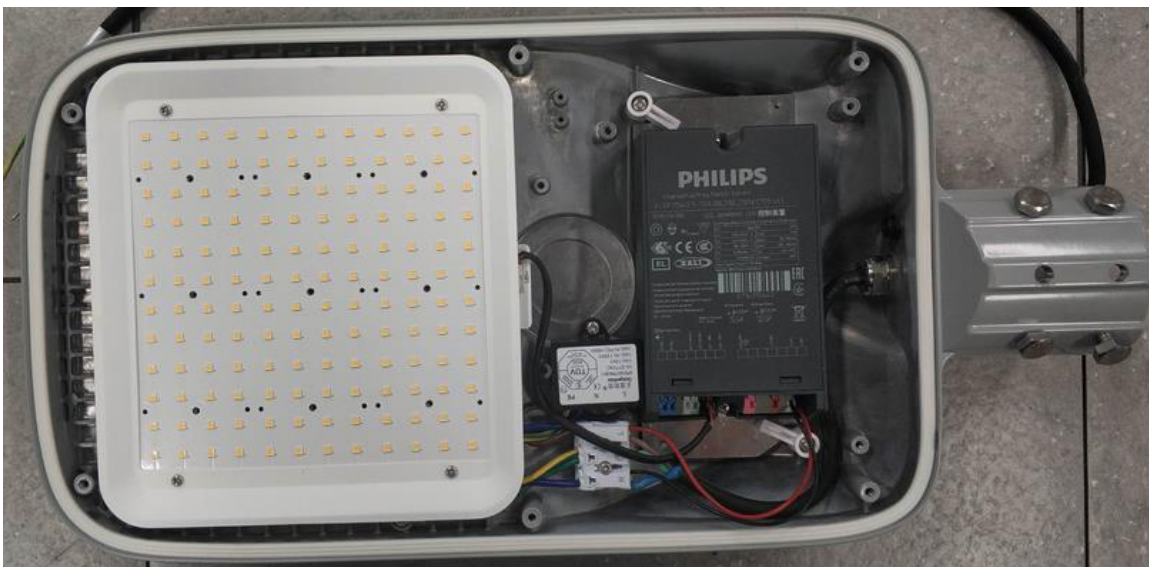
Over view of AOK-75WiL02-NV-L5-00-XX70-T202-PH



Back view of AOK-75WiL02-NV-L3-00-XX70-T201-PH and AOK-75WiL02-NV-L5-00-XX70-T202-PH



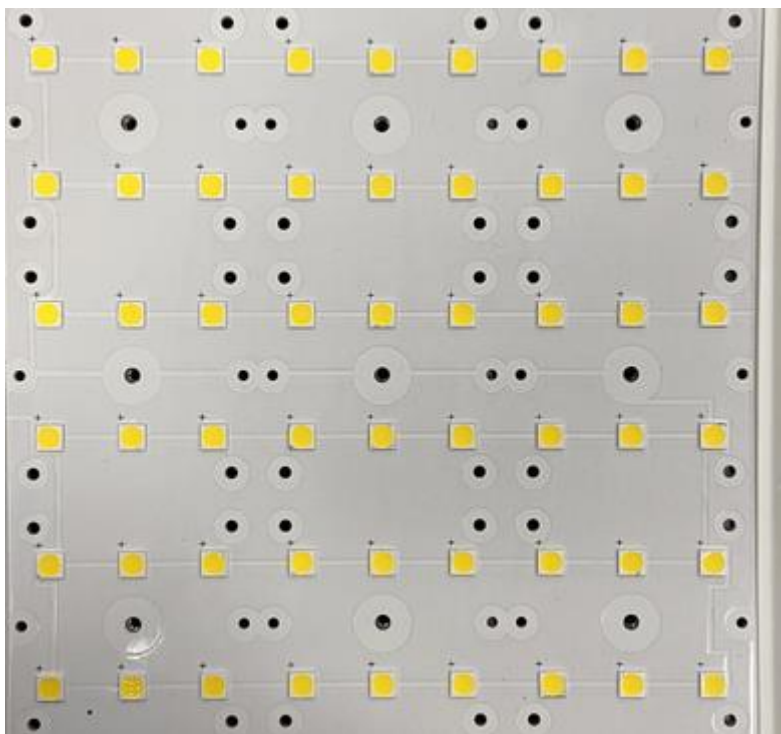
internal view of AOK-75WiL02-NV-L3-00-XX70-T201-PH and AOK-75WiL02-NV-L5-00-XX70-T202-PH



LED module AOK-75WiL02-NV-L3-00-XX70-T201-PH



LED module AOK-75WiL02-NV-L5-00-XX70-T202-PH



---End of Report---